

### Remarks

The present application was filed on July 14, 2003. A First Office Action mailed August 2, 2004 objected to the drawings and rejected claims 1-22. In response, the Applicant cancelled claims 8, 17 and 21 that were the source of the objection to the drawings. The Applicant has also requested amendments to the claims to overcome the Examiner's rejections of claims 5 and 14 under § 112. These amendments are proper, do not introduce new matter and place the application in condition for reconsideration and allowance.

The status of the pending claims is as follows:

<u>Claim</u>	<u>Status</u>
1. (Original)	Independent.
2. (Original)	Depends from claim 1.
3. (Original)	Depends from claim 1.
4. (Original)	Depends from claim 1.
5. (Currently Amended)	Depends from claim 1.
6. (Original)	Depends from claim 1.
7. (Original)	Depends from claim 1.
8. (Cancelled)	
9. (Original)	Depends from claim 1.
10. (Original)	Independent.
11. (Original)	Depends from claim 10.
12. (Original)	Depends from claim 10.
13. (Original)	Depends from claim 10.
14. (Currently Amended)	Depends from claim 10.
15. (Original)	Depends from claim 10.
16. (Original)	Depends from claim 10.
17. (Cancelled)	
18. (Original)	Depends from claim 10.
19. (Original)	Independent.
20. (Original)	Depends from claim 19.
21. (Cancelled)	
22. (Original)	Depends from claim 19.

#### Rejection of Claims 5, 8, 14, 17 and 21 under 35 U.S.C. § 112

In the First Office Action, the Examiner rejected claims 8, 17 and 21 under 35 U.S.C. § 112 for failing to comply with the enablement requirement. The Applicant has requested cancellation of claims 8, 17 and 21, and submits that the rejection is now moot.

Claims 5 and 14 were also rejected under 35 U.S.C. § 112 for insufficient antecedent basis. The Applicant has requested amendments to correct typographical errors in claims 5 and 14 and to provide the proper antecedent basis.

#### Rejection of Claims 1-22 under 35 U.S.C. § 103(a)

In the First Office Action, the Examiner rejected claims 1-22 under 35 U.S.C. § 103(a) as being unpatentable over Byrne '729 or Pipitone '049 in view of Nakagawa '529 or Nakamura '160.<sup>1</sup> The rejection is respectfully traversed.

The Applicant will address independent claims 1, 10 and 19 together because the Examiner's rejection is based on a common argument. The Examiner's rejection of claims 1, 10 and 19 is premised on the combination of certain elements of Byrne '729 or Pipitone '049 with certain elements of Nakagawa '529 or Nakamura '160. Specifically, the Examiner suggests that Byrne '729 or Pipitone '049 teach an acoustic generating device that comprises a piezoelectric material, a metal diaphragm having a nodal fulcrum, an electric circuit, and mounting devices that support the diaphragm at the nodal fulcrum. The Examiner also admits, however, that Byrne '729 or Pipitone

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<sup>1</sup>Byrne '729 is U.S. Pat. No. 4,330,729 issued to Byrne.  
Pipitone '049 is U.S. Pat. No. 4,063,049 issued to Pipitone, et al.  
Nakagawa '529 is U.S. Pat. No. 4,430,529 issued to Nakagawa, et al.  
Nakamura '160 is U.S. Pat. No. 4,593,160 issued to Nakamura.

'049 do not teach supporting the metal diaphragm with an adhesive, and therefore offers Nakagawa '529 or Nakamura '160 to cure this deficiency of Byrne '729 and Pipitone '049. (First Office Action, page 4). The Applicant respectfully submits that the Examiner has failed to establish a *prima facie* case of obviousness under 35 U.S.C. § 103 for claims 1, 10 and 19.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. MPEP 2143. Second, there must be a reasonable expectation of success. *Id.* Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. *Id.* The Applicant respectfully submits that the Examiner has failed to establish that there is some suggestion or motivation to combine the references as proposed. Also, all the Applicant's claim limitations are not taught by the proposed combinations.

The Applicant will first address the Examiner's mis-characterization of the Pipitone '049 and Nakamura '160 references. The Examiner asserts the Pipitone '049 reference as follows: "Pipitone does teach the mounting devices that support the diaphragm at the node ring." (Office Action, p. 4, ll. 18-19). Nonetheless, Pipitone '049 fails to teach or suggest the limitation of mounting devices that "support the metal diaphragm at the nodal fulcrum." In fact, Pipitone '049 never mentions a nodal fulcrum. Accordingly, the Pipitone '049 reference should be from the proposed combination.

Nakamura '160 similarly fails to teach the very limitation for which it was cited. The Examiner asserts Nakamura '160 as follows: "Nakamura teaches an adhesive for connecting the mounting device to the diaphragm." (Office Action, p. 4, ll. 15-16). However, Nakamura '160 does not teach or suggest the use of adhesive between the diaphragm and a support structure. Instead,

Nakamura '160 teaches a piezoelectric vibrator (1) supported by a support member (6) without the use of adhesive. Nakamura '160 also includes a diaphragm (8), to which vibration is transferred from the piezoelectric vibrator (1) through coupling members (12). The coupling members (12) have been mis-characterized as support members, when the coupling members (12) are nothing more than wire pieces that transfer vibration to the diaphragm (8). This is a significant distinction. Nakamura '160 uses adhesive between two pieces that freely vibrate: the coupling member (12) and the diaphragm (8). Nakamura '160 does not teach or suggest the use of adhesive between the fixed support member (6) and the piezoelectric vibrator (1). Because the prior art references fail to disclose the elements for which they were cited, these references should be withdrawn from the Examiner's proposed combination. As explained below, there is no suggestion or motivation to combine the remaining two prior art references, Byrne '729 and Nakagawa '529.

"There are three possible sources for a motivation to combine references: the nature of the problem to be solved, the teachings of the prior art, and the knowledge of persons of ordinary skill in the art." MPEP 2143.01, *citing In re Rouffet*, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457-1458 (Fed. Cir. 1998). "A statement that modifications of the prior art to meet the claimed invention would have been 'well within the ordinary skill of the art' at the time the claimed invention was made' because the references relied upon teach that all aspects of the claimed invention were individually known in the art is not sufficient to establish a *prima facie* case of obviousness without some objective reason to combine the teachings of the references." MPEP 2143.01, *citing Ex parte Levengood*, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993), *emphasis added*. In the First Office Action, the Examiner offers the following basis for the combination of the Byrne '729 or Pipitone '049 and Nakagawa '529 or Nakamura '160 patents:

Since Byrne or Pipitone does teach the mounting devices that support the diaphragm at the node ring; it therefore would have been obvious to one skilled in the art to provide an adhesive or a bonding agent, as taught by Nakagawa or Nakamura, for securely connect the mounting devices (20, 24, and 22, 30, respectively) of Byrne or Pipitone to the diaphragm.

First Office Action, page 4, ll. 18-21. The Applicant respectfully submits that it would not have been obvious to modify the sound generating device of Byrne '729 with the adhesive of Nakagawa '529 to produce the claimed invention. In fact, both references teach away from the proposed combination. Byrne '729 teaches against the use of adhesive. Nakagawa '529 teaches against the use of adhesive to support a device at the nodal fulcrum. Thus, they cited references teach away from the combination proposed by the Examiner as a basis for this rejection.

The Byrne '729 patent provides a means for accurately assembling a piezoelectric transducer at the node ring. Byrne '729 teaches a clamping assembly that holds the diaphragm in place "that can be rapidly and easily assembled" instead of using "cement which requires a period of time for curing." (See Byrne '729, col. 2, ll. 2-3, and col. 1, ll. 36-37, respectively). Since an object of Byrne '729 is to provide rapid and easy assembly, one skilled in the art would not be moved to add adhesive to the clamped assembly of Byrne '729.

Nakagawa '529 also fails to support the combination of references proposed by the Examiner. The piezoelectric loudspeaker of Nakagawa '529 teaches a diaphragm 11 sandwiched at its edges between frames 13, 14 and secured to a central support (17) with adhesive. Nakagawa '529 seeks to raise the sound pressure level and reduce the acoustic distortion by supporting the diaphragm at its center, away from the nodal fulcrum. Nakagawa '529 teaches that placement away from the nodal fulcrum also reduces acoustic loss. (See Nakagawa '529, col. 2, ll. 48-70, Figs. 1-9). One of ordinary

skill in the art would be discouraged from combining the adverse and opposite teachings of Byrne '529 and Nakagawa '529 to produce the claimed invention.

The Applicant asserts that the Examiner has failed to establish a *prima facie* case of obviousness and has impermissibly engaged in hindsight to reconstruct the Applicant's invention. The cited references simply do not provide a motivation or suggestion to combine the inventions of Byrne '729 or Pipitone '049 with Nakagawa '529 or Nakamura '160 to arrive at the Applicants invention. Because all the claims depend from claims 1, 10 and 19, which are allowable for the reasons set forth above, the Applicant respectfully requests that the Examiner pass claims 1-22 to issue.

This is intended to be a complete response to the First Office Action mailed August 2, 2004. The Examiner is invited to contact the attorneys listed below should any questions arise concerning this response.

Respectfully submitted,

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